

What is claimed is:

1. A parts mounting method, comprising the steps of:

moving a suction section, including a plurality of suction nozzles, to a parts supply section in which a plurality of parts are stored so that they can be sucked at the same time,

sucking the parts stored in the parts supply section onto the plurality of suction nozzles at the same time; and

mounting the sucked parts on a board,

wherein the suction nozzles classified into groups according to their shift amount, the shift amount of the suction nozzles in each group are within an allowable range for simultaneous suction, and suction nozzles each involving a shift amount outside the allowable range in which simultaneous suction is possible are set in a different group,

and then the parts are sucked at the same time at each group.

2. A parts mounting method according to claim 1:

wherein the shift amount is defined between the parts sucked by the suction nozzles and the suction nozzles.

3. The parts mounting method according to claim 2 further comprising;

a step of calculating a position correction value of each suction section according to the shift amount at each group classified,

wherein the parts are sucked at the same time at each group after correcting a position of each suction section by using the position correction value.

4. The parts mounting method according to claim 3, wherein the position correction value of the suction section is an average of the maximum and the minimum of the shift amount,

wherein the shift amount is defined between the center of each suction nozzle and the center position of a part at a parts suction position.

5. The parts mounting method according to claim 2 further comprising the steps of:

detecting each position of a plurality of the suction nozzles; and

calculating a shift amount according to the each position detected,

wherein the shift amount is defined between a center position of the suction nozzle and a center position of the parts at the point where the parts are sucked.

6. The parts mounting method according to claim 5,

wherein the center position of the suction nozzle is detected after recognizing a tip face of each suction nozzle.

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7. The parts mounting method according to claim 6, wherein the center position of the suction nozzle is detected after placing an inspection jig on each suction nozzle.

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8. The parts mounting method according to claim 3, wherein the shift amount is between the center of each suction nozzle and the center of a part,

the shift amount is found by a parts recognition unit for recognizing the suction state of the part onto the suction nozzle, and

the groups of the suction nozzles and the position correction value of the suction section at each group are changed according to the shift amount,

10 wherein the parts are sucked simultaneously at each of the groups.

9. The parts mounting method according to claim 1, wherein suction nozzles are classified into a specific group in order to suck the parts,

wherein, at the suction nozzles classified, errors for suction have occurred exceeding an allowable number of

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times or the parts suction ratio is less than an allowable value.

10. The parts mounting method according to claim 1 further comprising:

a feature to select a mode of allowable range for simultaneous suction from several modes; and

5 a feature to set the selected mode in order to classify the suction nozzles into several groups according to the modes,

wherein the modes are divided into several ranks between a mode for giving high priority to productivity and
10 a mode for giving high priority to parts suction ratio.

11. The parts mounting method according to claim 2,

wherein the shift amount between the center of a part at a parts suction position and the center of each suction nozzle,

5 and the shift amount is corrected by changing a feed amount of the parts from the parts supply section.

12. A parts mounting apparatus comprising:

a suction section provided with a plurality of suction nozzles,

a parts supply section in which a plurality of
5 parts are stored so that they can be sucked at the same

time, and

a control section for performing control so as to move the suction section to the parts supply section, suck the parts stored in the parts supply section onto the plurality of suction nozzles at the same time, and mount
10 the sucked parts on a board,

wherein the control section performs control so that the suction nozzles classified into groups according to their shift amount defined between the parts and the suction nozzles,
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wherein the suction nozzles classified into groups according to their shift amount, the shift amount of the suction nozzles in each group are within an allowable range for simultaneous suction, and suction nozzles each
20 involving a shift amount outside the allowable range in which simultaneous suction is possible are set in a different group,

and then the parts are sucked at the same time at each group.

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13. The parts mounting apparatus according to claim 12,

wherein the control section calculates a position correction value of the suction section according to the shift amount for each of the groups and corrects the
5 suction section based on the position correction value.

14. The parts mounting apparatus according to claim 13,
wherein the position correction value of the
suction section is an average of the maximum and the
minimum of the shift amount,
- 5 wherein the shift amount is between the center
position of each suction nozzle and the center position of
a part at a parts suction position.

15. The parts mounting apparatus according to claim 12
further comprising:
- a database storing as many data pieces of the
shift amount between the center position of each suction
5 nozzle and the center position of a part at each parts
suction position as the number of combinations of the
number of the suction nozzles and the number of the parts
suction positions.

16. The parts mounting apparatus according to claim 13
further comprising:
- a parts recognition unit for recognizing the
suction state of each part onto each suction nozzle,
- 5 wherein the control section finds the shift amount
between the center position of each suction nozzle and the
center position of a part by the parts recognition unit and
changes the group of the suction nozzles where the

simultaneous suction operation is to be performed and the
10 position correction value of the suction section for each
group in response to the shift amount.

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